Windows/Office Installation Guide

Step 0: Backup your data

Back up your folders and files in the following locations:
A) C:\Users\Username
If you've used this guide before and moved your user folders to a different partition/drive, you can safely bypass step A.
B) C:\Users\Username\AppData
The AppData folder is hidden, just type it into the path field. Some game devs store saves here even though they really shouldn't.
You can also use something like https://www.gamesave-manager.com to backup your game saves.
Not all the folders need to or should be backed up. Game dev folders, 3rd party programs, etc might be safe to backup, but you probably shouldn't backup Microsoft or other system related folders in here as they can contain system settings files which can cause unexpected issues with your fresh install.

Step 1: Download and verify you have a legitimate Windows ISO

This guide uses IoT LTSC but the same steps apply to any non-VolumeLicense Enterprise/Education/Workstation edition of Windows.

Windows10 IoT LTSC 2021: en-us_windows_10_iot_enterprise_ltsc_2021_x64_dvd_257ad90f.iso

Torrent:
magnet:?xt=urn:btih:0d8165158c22430ebb5c0afced1c37833877192a

Direct downloads:
Filename: en-us_windows_10_iot_enterprise_ltsc_2021_x64_dvd_257ad90f.iso
https://massgrave.dev/windows_ltsc_links.html
https://pixeldrain.com/u/6y73DJZ2

SHA-256 Source (VisualStudio Subscription Required): https://download.my.visualstudio.com/db/en-us_windows_10_iot_enterprise_ltsc_2021_x64_dvd_257ad90f.iso?t=61f80e60-fc8d-403b-a74d-aa90bcd92ecf&e=1637126190&h=6598e1ae25f0484870ef33823d0aff5c&su=1

Details: https://www.heidoc.net/php/myvsdump_details.php?id=p8166f112307ax64len
SHA-256: A0334F31EA7A3E6932B9AD7206608248F0BD40698BFB8FC65F14FC5E4976C160

Verify SHA-256 with 7zip
https://www.7-zip.org/download.html
Install 7zip > right click ISO > CRC SHA > SHA-256
If the SHA-256 matches the one from visualstudio.com, then the file is bit for bit identical to the official one and safe.
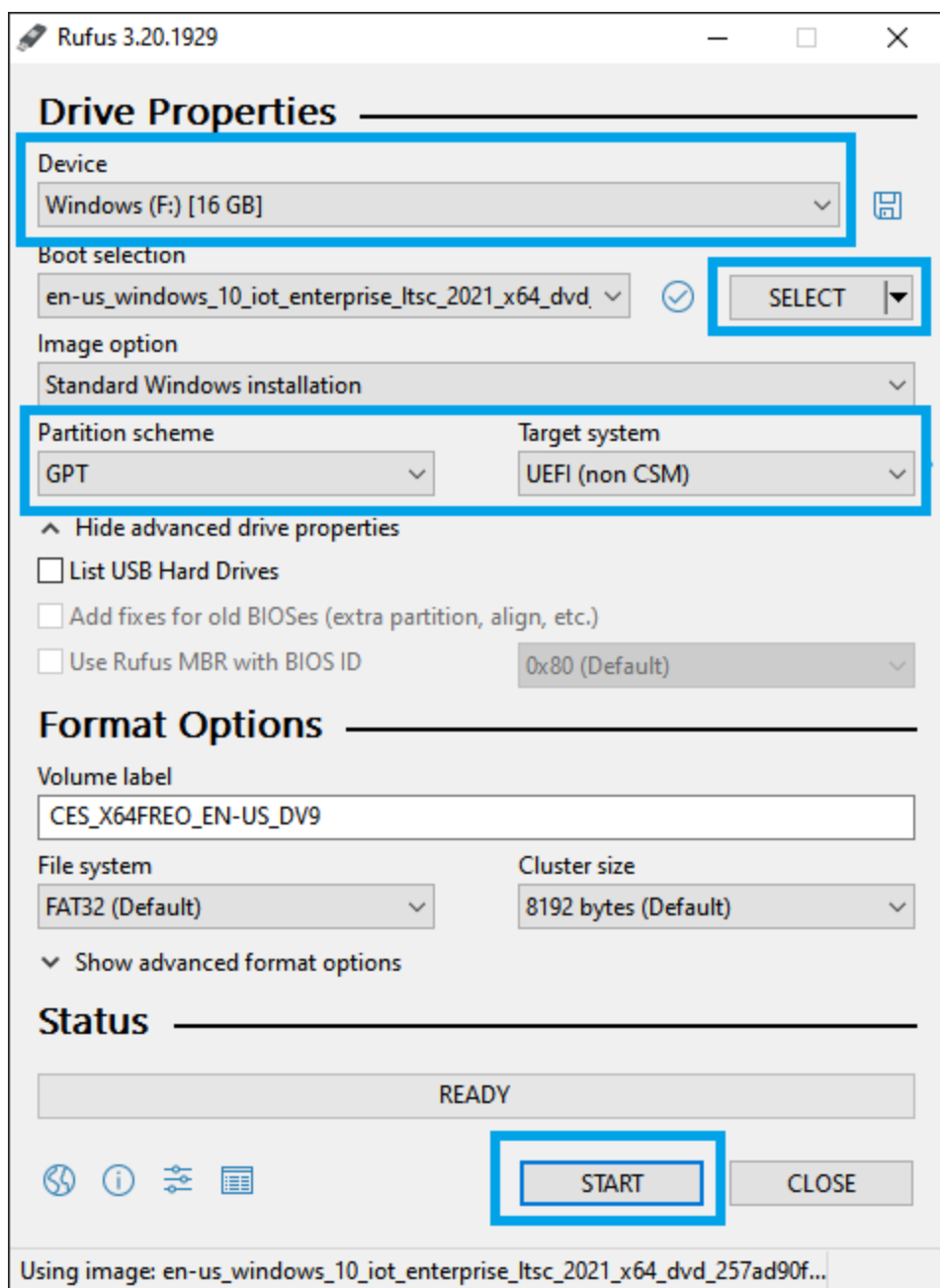
Step 2: Download Rufus and flash to USB

https://github.com/pbatard/rufus/releases/
Plug in a USB drive (at least 8GB)
Start Rufus, it should default to GPT partition scheme and UEFI (non CSM)
Select the ISO you downloaded and click Start to flash to USB

If you're installing on a PC with only one drive, proceed to the next step.

If you're installing on a system with previous installations and multiple drives, you'll want to install a free partition management tool like Minitool, and wipe the EFI partitions off all your non-OS drives.
https://cdn2.minitool.com/?p=pw&e=pw-free

The reason for this is because a computer should only have one EFI partition and the Windows installer will scan all drives to find that EFI partition.

If you have a drive you used for a previous installation but never fully formatted it, it will still have an EFI partition and that EFI partition will be used by the installer even if it's on a different drive than where you're trying to install Windows now.

If your EFI partition and system partition are on different drives, you wont be able to boot if you were to remove or format the drive with the EFI partition.

Wiping the EFI partitions off all other drives before installation will ensure that the EFI and system partitions are on the same drive.

If all this sounds too complicated for you, you can also just temporarily disconnect all drives except the drive you want to install Windows on, and reconnect them after installation.

Step 3: Booting to USB

Reboot and make sure it's set to UEFI mode in BIOS settings.
While you're in BIOS, you may also choose to disable TPM and/or SecureBoot to prevent the Win11 upgrade notice.
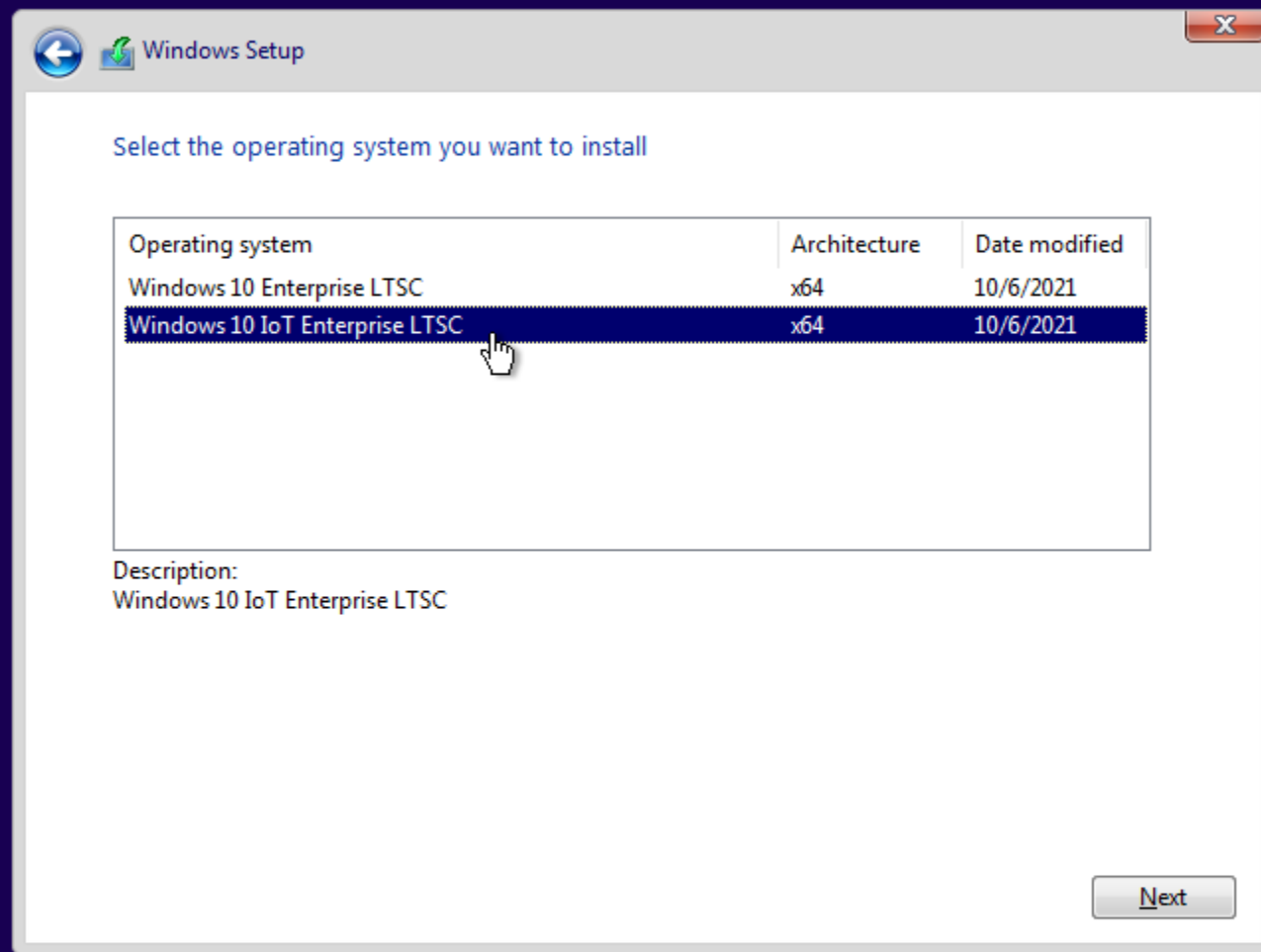Restart PC and when the boot screen comes up press the key it says to on screen to access boot selection.

The key press required varies by OEM and could be F1, F2, F7, F10, F12, Delete, Esc, etc.
If unsure or it doesn't say so on screen, just mash all of them, restarting as needed to retry.
Once in boot selection, choose the USB drive and boot it.

Step 4: Installing Windows

At key entry, choose "I don't have a product key"
When choosing edition there will be two choices, LTSC and IoT LTSC, select IoT LTSC for HWID activation compatibility and longer support cycle.
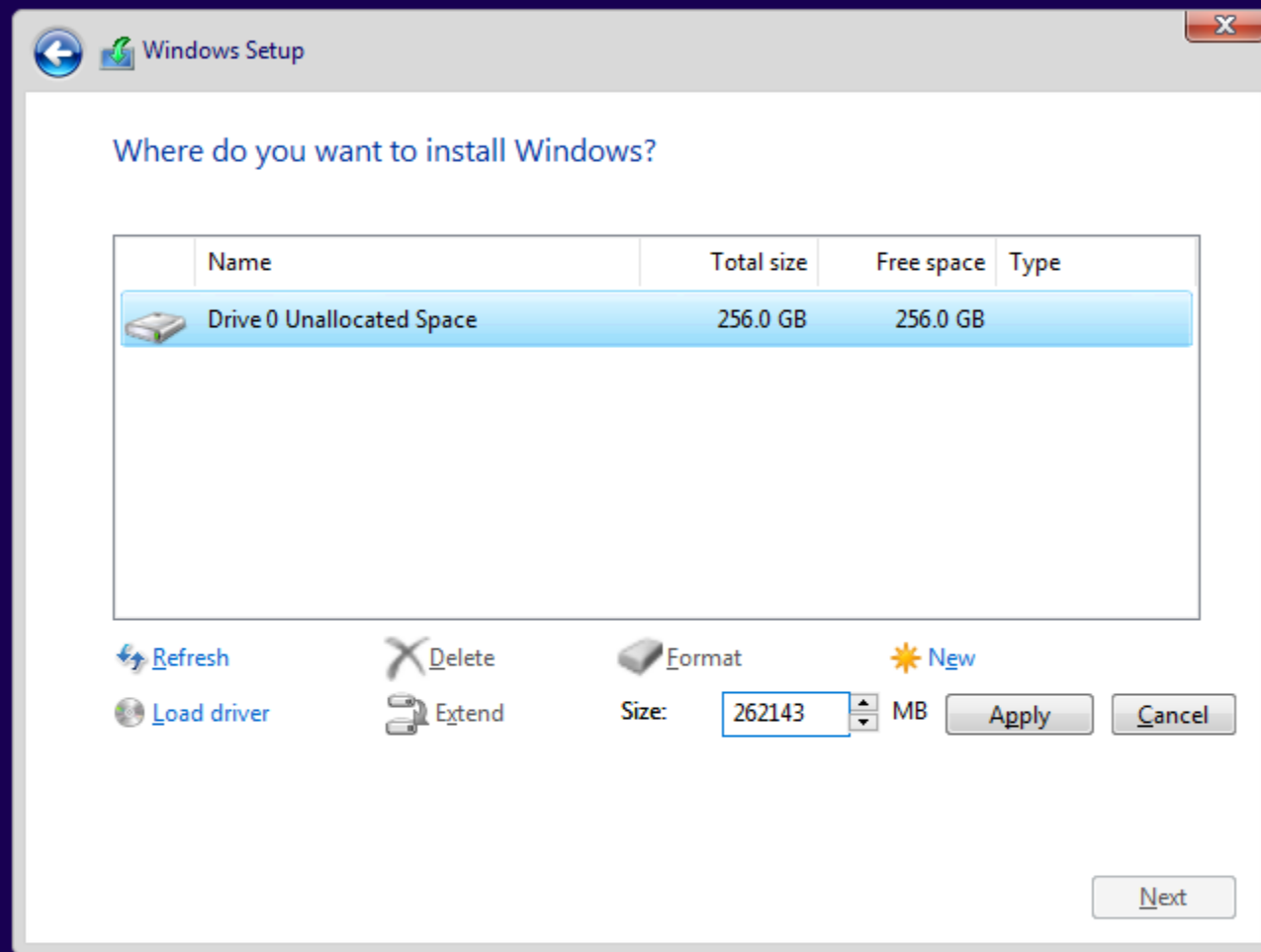
At installation type, choose Custom Install. At the drive selection step it's important here to let the Windows partition take the entire drive first, then shrink it after installation if you want to add extra partitions.

Windows Setup

Where do you want to install Windows?

Name	Total size	Free space	Type
Drive 0 Unallocated Space	256.0 GB	256.0 GB	

Refresh   Delete   Format   New

Load driver   Extend   Size: 262143 MB   Apply   Cancel
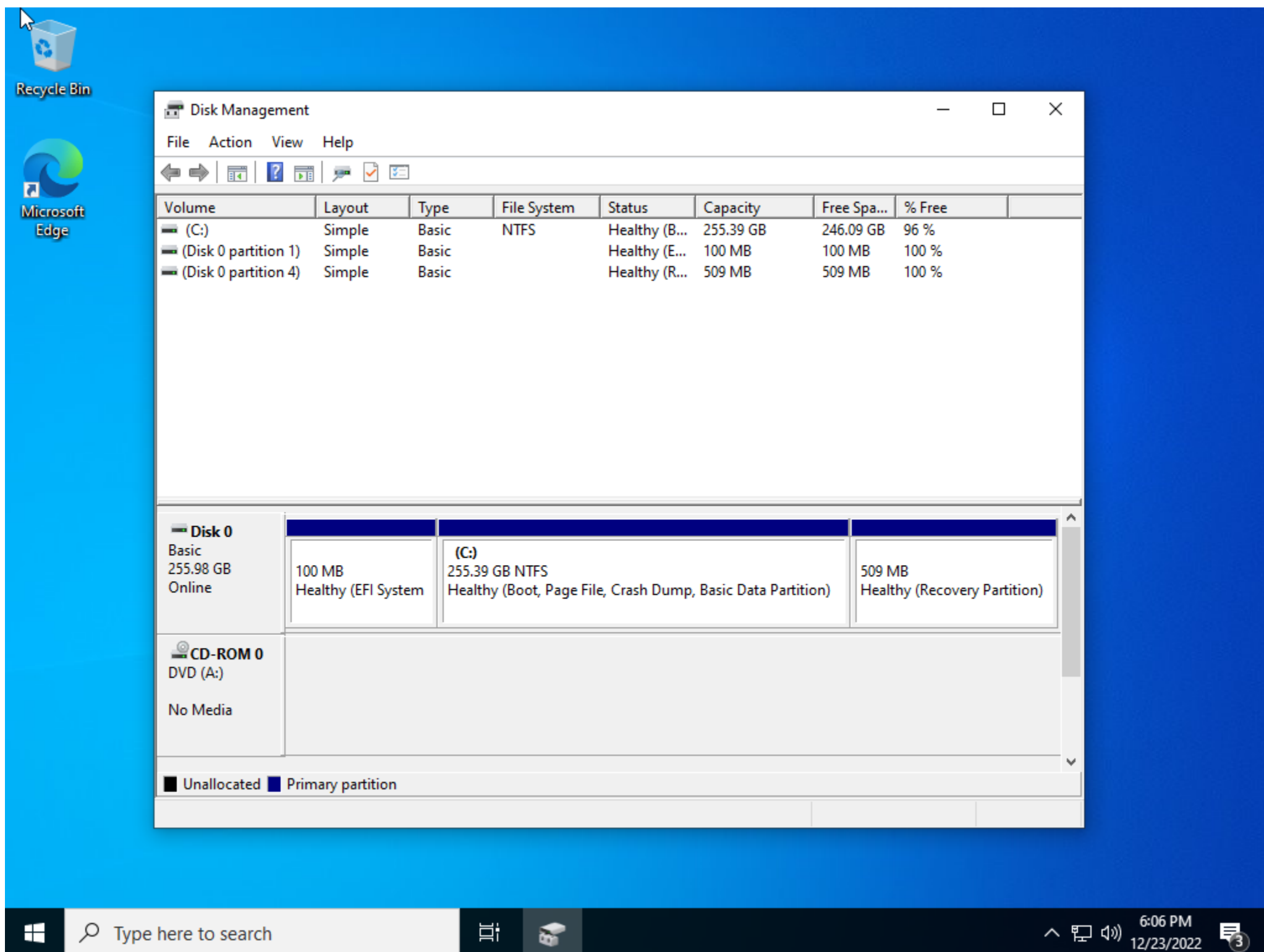
Next

1 Collecting information   2 Installing Windows

The reason being that the installer will create a 500MB recovery partition after the Windows partition, even if there's extra space left after it, leaving you with a difficult to move recovery partition in the middle of your drive. Letting the Windows partition use the entire drive first will ensure the recovery partition is placed at the very end of the drive, saving headaches on future resizing.

Click next and the installer will unpack and install Windows to the drive.

After a restart, it will begin to detect hardware and install generic drivers.

Most default generic drivers should work fine with no issue, but LAN drivers should be manually updated if you want all functionality like Wake on LAN for remote desktop or file sharing over the network.

Account Creation

Click "Domain join instead" and create your local admin account.

The rest of the settings should be self explanatory.

HWID Activation
Download latest release from https://github.com/massgravel/Microsoft-Activation-Scripts
Run the script as admin, follow the on-screen instructions, done.
This activation is permanent and tied to your CPU/mobo/GPU/RAM combo and will persist through reinstalls, the only way to trigger a deactivation is if you change something like 10+ hardware components simultaneously, which would essentially mean a completely new computer.

Microsoft Store
IoT LTSC does not come with Microsoft Store by default, nor any of the basic preinstalled apps.
If you need the MS Store, simply type "wsreset -i" into CMD and wait for a minute or so and it should pop up on the Start Menu.
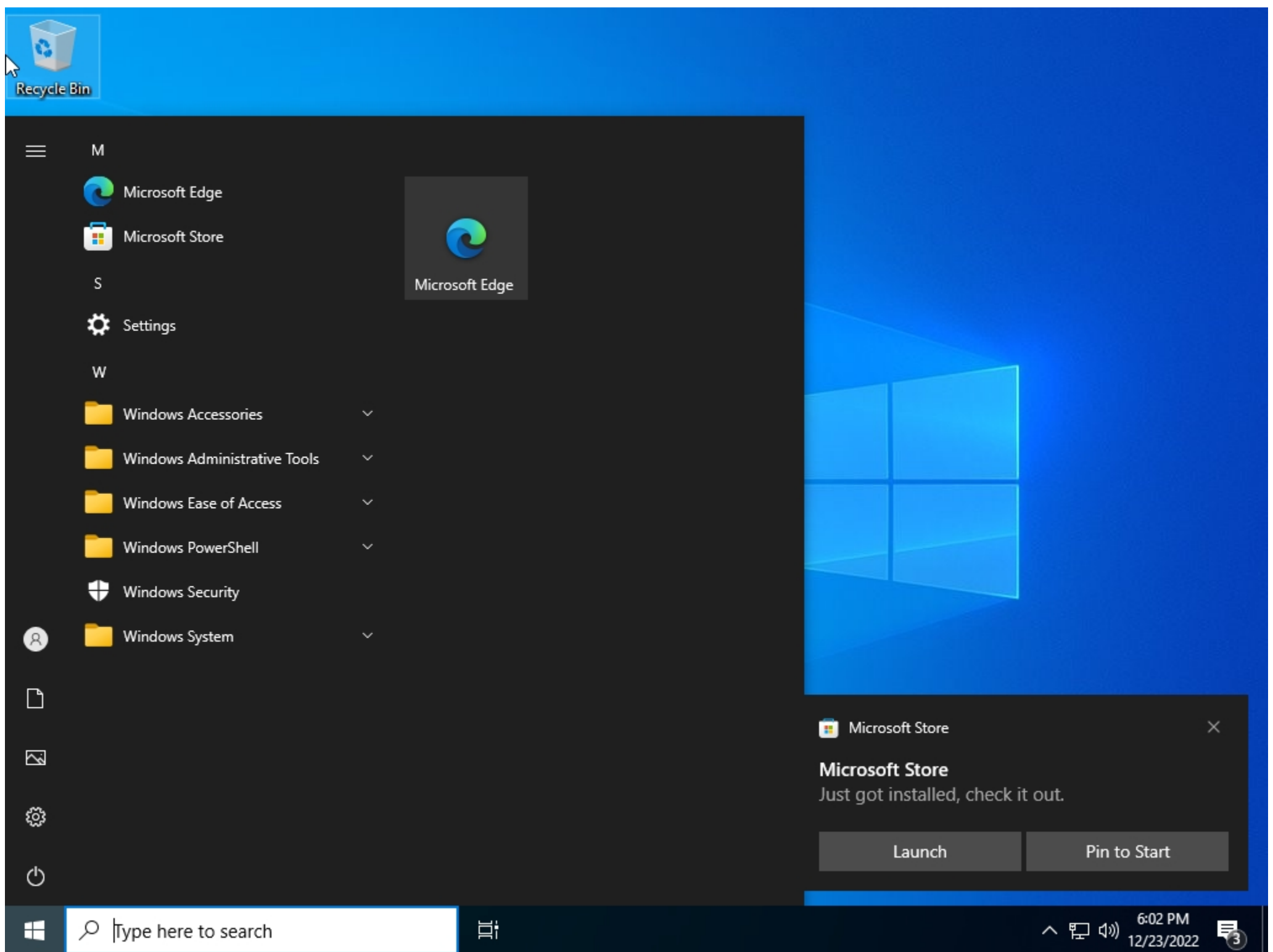
Without the MS Store and the default apps you may run into situations such as when starting a game you'll be prompted with **"You'll need a new app to open this 'ms-gaming overlay'**. This is because the game is trying to start up the Xbox Game Bar overlay on startup. You can just ignore this and it will not affect anything, but if you want to get rid of the notice just install the MS Store as above, then search for the Xbox Game Bar in the store and install it.

Step 5 (Optional): Installing Office

Office can be downloaded directly from MS servers with zero issues:
https://officecdn.microsoft.com/db/492350f6-3a01-4f97-b9c0-c7c6ddf67d60/media/en-us/ProPlus2021Retail.img
Win10+ has native support for .img, .iso, and other archive formats, just double click to mount and then run Setup.exe.

Activating Office
https://github.com/abbodi1406/KMS_VL_ALL_AIO/releases
Download, unzip with 7zip, run the activator, done.

Note: As this is a KMS server emulator, there is a chance of it getting flagged by Defender or another antivirus as PUA/malware. Be aware of this down the road and that you may need to whitelist it in your AV or download the latest version of KMS and run activation again.

Alternatively, just use Office online if your needs are minimal.
https://www.microsoft.com/en-us/microsoft-365/free-office-online-for-the-web

And as a last resort, you can try OnlyOffice, LibreOffice, or WPS.
Some of these have their own file formats, so for compatibility go into settings and set it to always save as Office file formats (doc/xls/ppt/etc).
https://www.onlyoffice.com/download-desktop.aspx?from=home-use
https://www.libreoffice.org/download/download-libreoffice
https://www.wps.com/download

Do not bother with OpenOffice. Oracle fired all its devs in 2011 and donated the trademark and source to Apache who also has done nothing with it since 2014, and it doesn't even support modern Office formats like docx.

Step 6 (Recommended): Partition system drive and move user folders to reinstall-proof your data

By default, your user folder is stored in C:\Users\username, the problem with this is that if your install gets corrupted and you need to reinstall, all of your documents get wiped unless you have a spare computer to plug your drive into to pull the files first. Moving your user folders to a 2nd partition/drive avoids this problem.

For a 256GB+ SSD, a 100GB Windows partition should be plenty of space for Windows itself and whatever programs you need.
For a 128GB or smaller SSD, you'll want to have a 2nd storage drive for user folders.
Games and large suites such as Adobe CC can be installed to a separate partition/SSD.
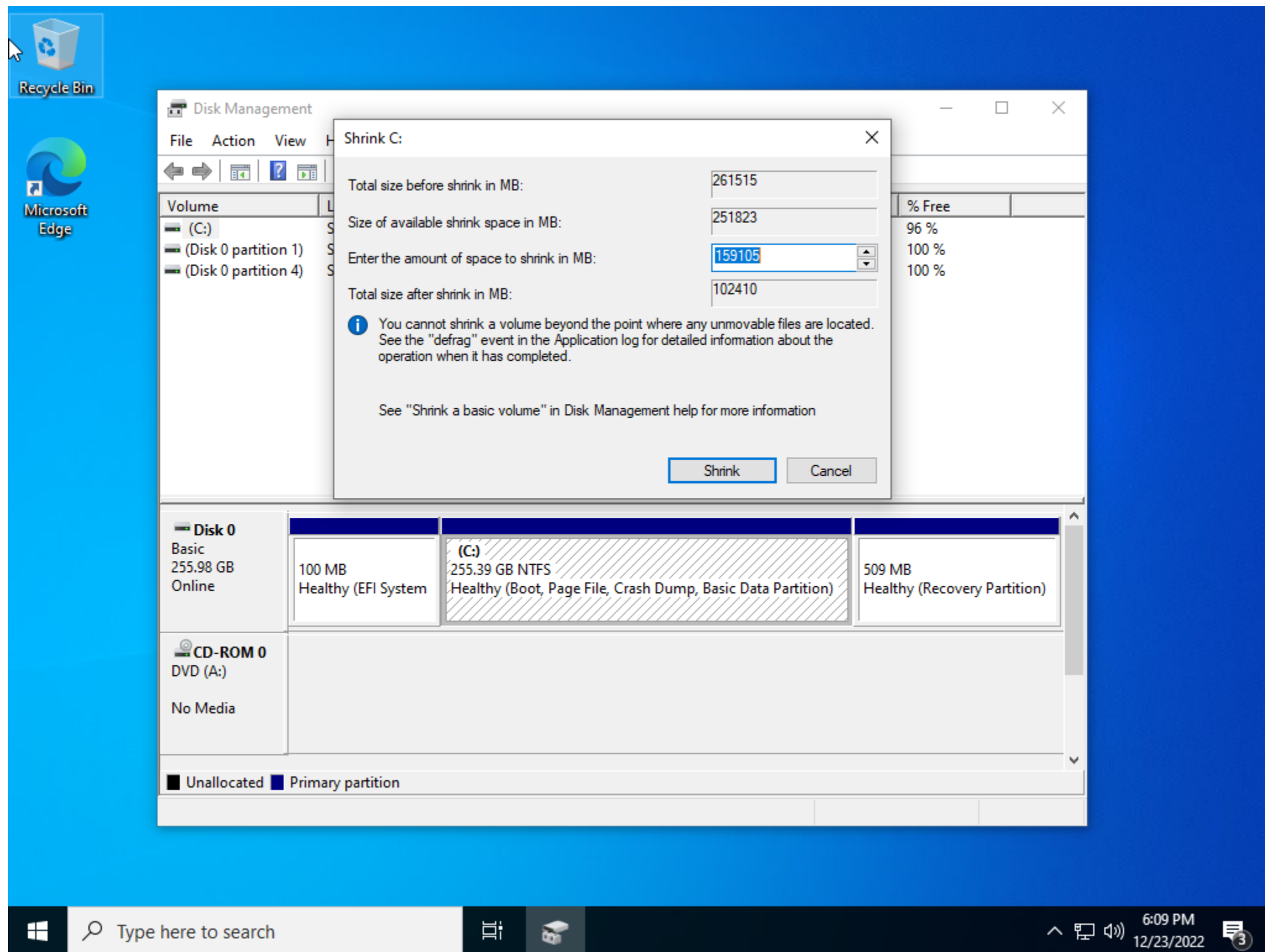
Partitioning:
Right click Start and select Disk Management.
Right click the [Windows (C:)] partition and select Shrink Volume, then enter in the amount to shrink in MB.
If you have a 256 GB SSD, you would want to shrink about 150GB, or 150000MB, then click Shrink.
If you have OCD and must have a nice round number, use a calculator to calculate 1024MB for each 1GB. So "Total size after shrink" for the Windows partition would be about 102410MB. (The extra 10MB will bump it up to display 100GB in Explorer instead of 99.99GB)
To get the amount you need to shrink, take your total partition size, subtract 102410, and you'll have your "amount to shrink" number.

After it's done, right click the new Unallocated space and select New Simple Volume.
Change whatever settings here as needed, but the default settings are fine. Click through and select Finish.
You should now have a Windows partition on C:\ and an empty data partition on D:\ (or whatever letter you assigned it).
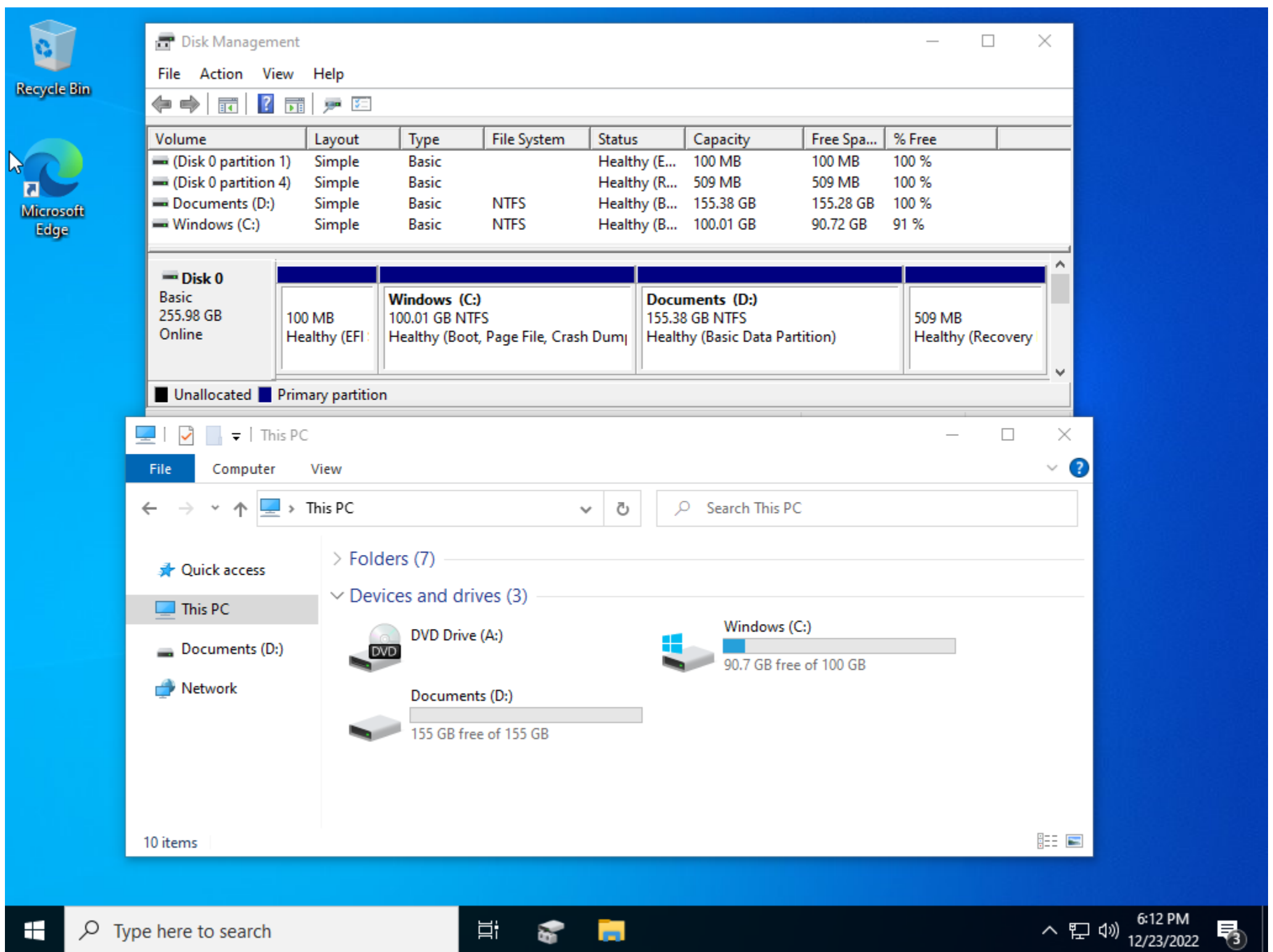
Moving user folders to second partition or 2nd drive

There are two ways to do this, manually though Windows GUI, or through Registry Editor, both ways make the exact same changes to internal system settings.

Method A
Go into C:\Users\username.
Right click on a folder you want to relocate and select Properties.
Go to the Location tab, and enter in a new location for the folder (example: C:\Users\username\My Documents -> D:\My Documents)
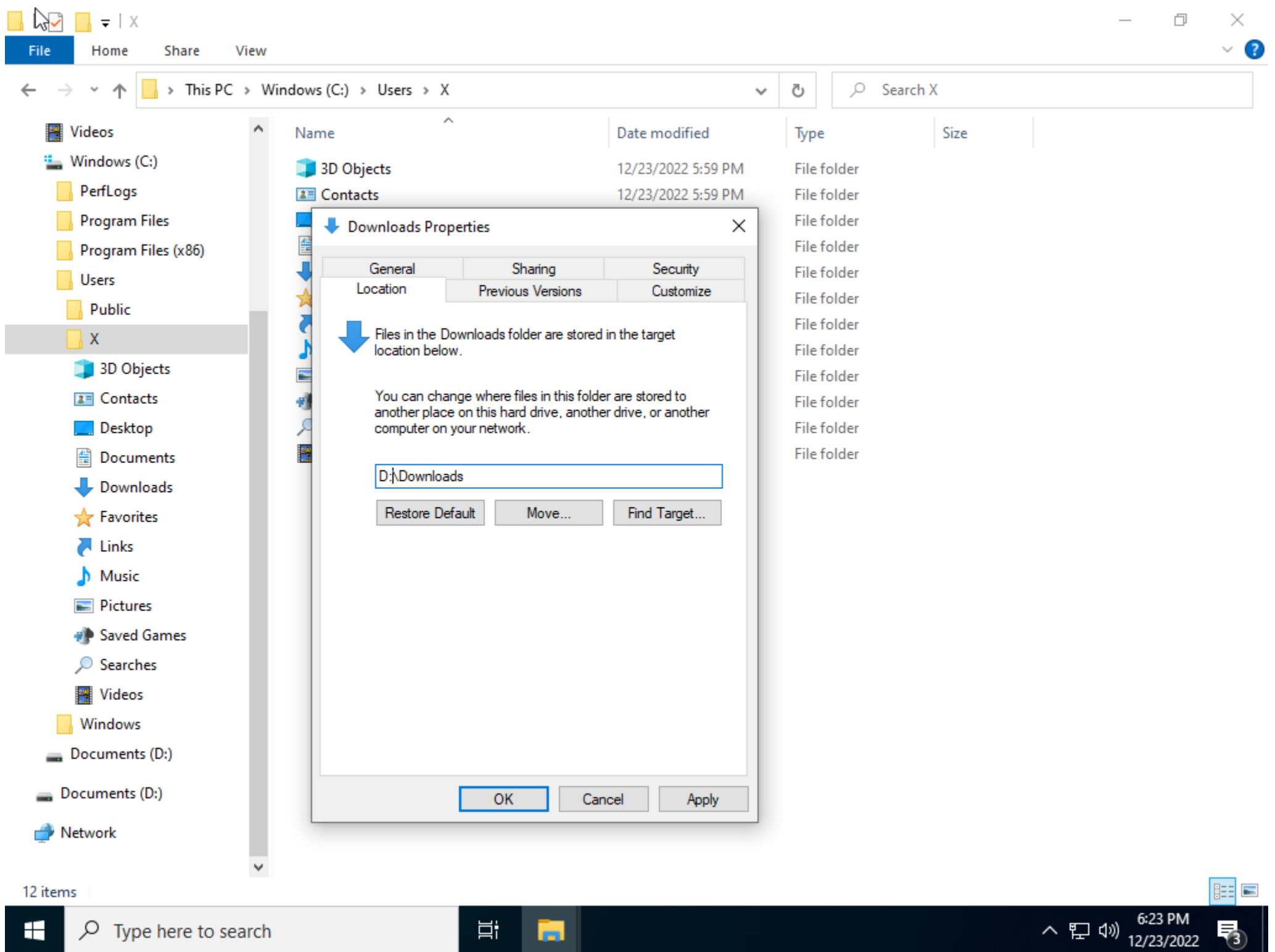
Do this for every folder with a Location tab.

Now when an application or game saves user files, it should save to your second partition/drive instead of C:\Users\username, unless the dev is one of those drooling retards that saves data to AppData, there's nothing you can do about them.
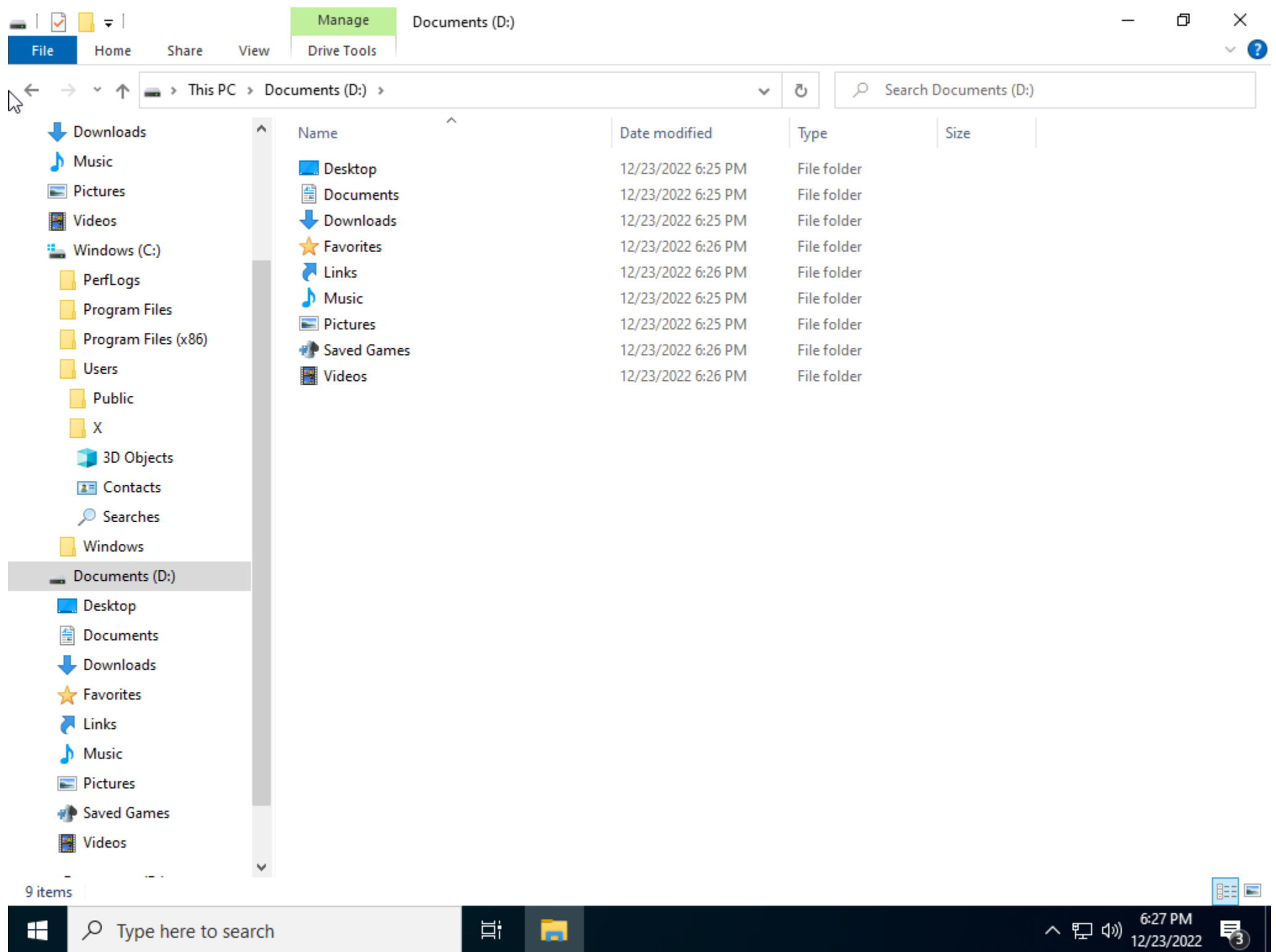
Now in the event you need to reinstall, you can freely reinstall without worrying about your files. Just reinstall and then redirect the user folders from C:\Users\username to your 2nd partition/drive and all your files will show up in the appropriate locations for access by programs and games.
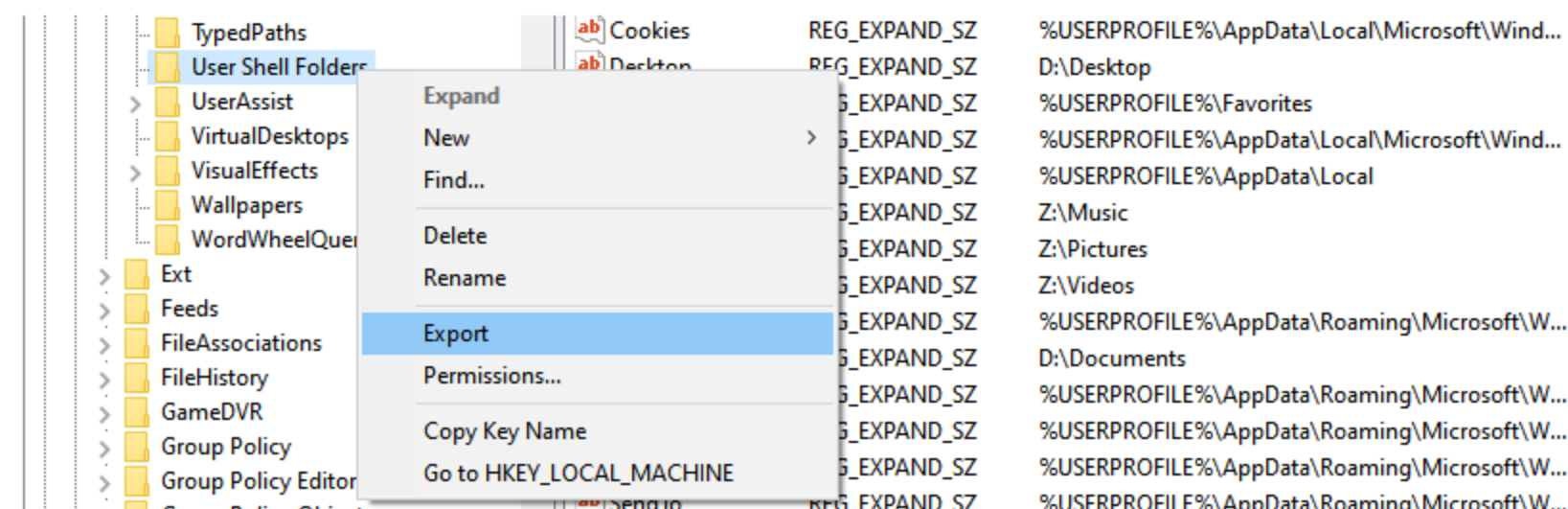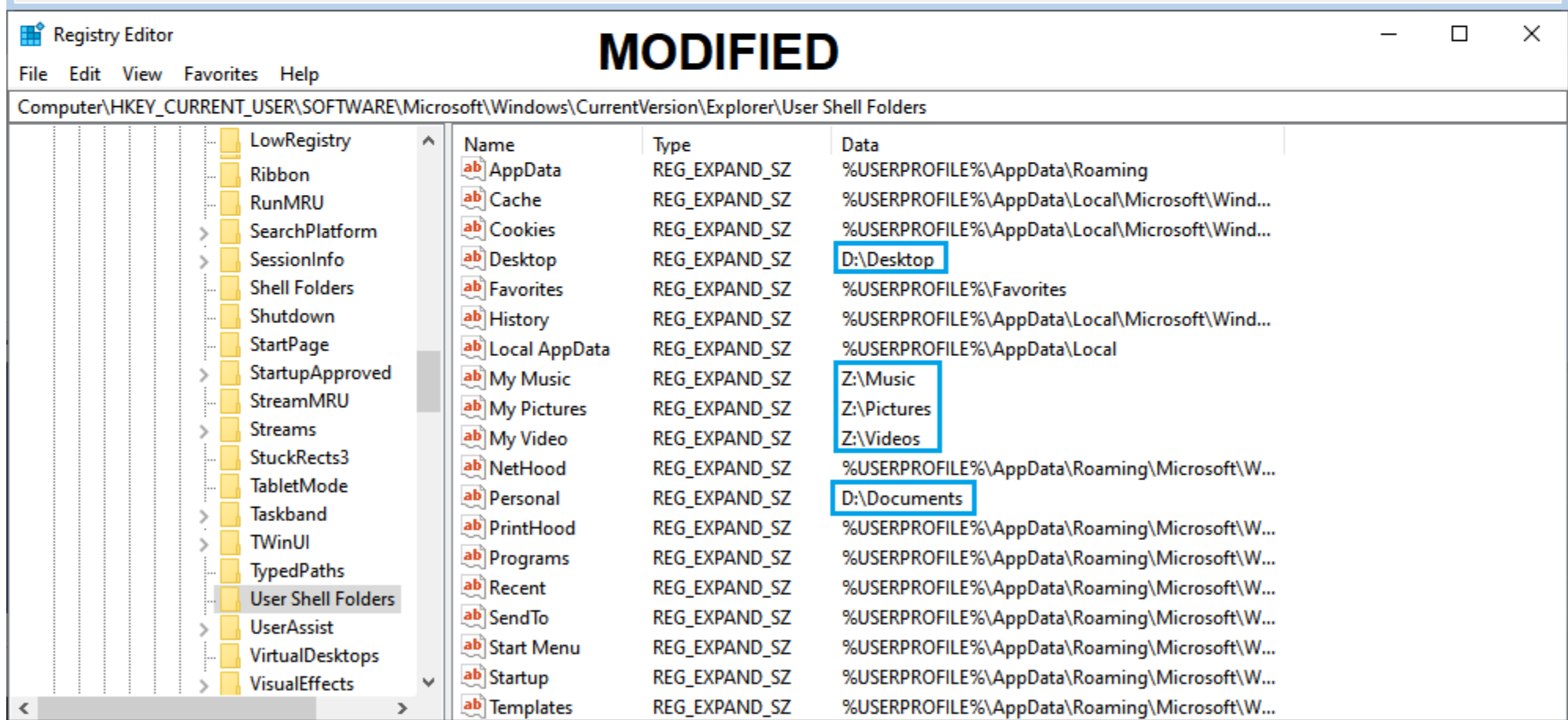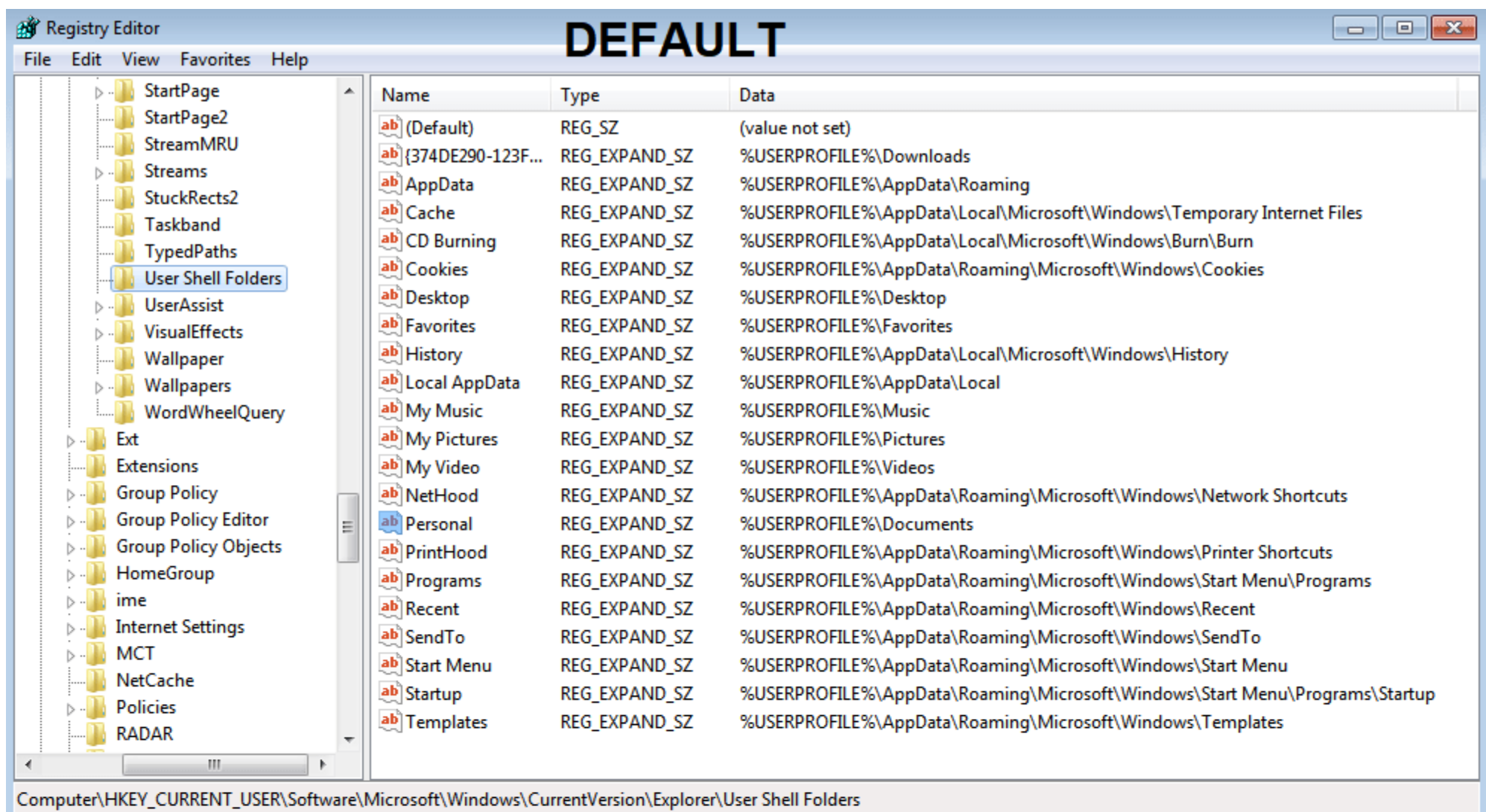
Method B
For more advanced users, you can edit all the folder locations directly from Registry Editor.
Press Win+R, type RegEdit, and press enter to bring up Registry Editor, and go to:
HKEY_CURRENT_USER\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\User Shell Folders

From here you can just copy paste "D:\" or wherever your secondary partition is and paste it in the fields for the folders you want to relocate.

If you want, you can also right click on the Key and export it to a .reg file to easily redo this on future reinstalls.

Step 7 (Recommended): Use portable apps to also save having to reconfigure on reinstalls

Hate losing all your browser shortcuts, tabs, bookmarks, settings, etc after a reinstall?
Just use a portable browser and install it to your secondary partition/drive.
The browser will be entirely self contained and can be updated in its own folder, so all your settings, tabs, bookmarks, etc will be safe from reinstalls.
https://portableapps.com/apps/internet/firefox_portable

https://portableapps.com/apps/internet/google_chrome_portable
https://vivaldi.com/download (installer allows installing in portable mode)
Other browsers:
https://portableapps.com/apps/internet
Other useful portable apps:
https://portableapps.com/apps

Step 8 (Optional): Disable Telemetry

https://github.com/builtbybel/privatezilla#download
Only disable items that you understand what they do and what they will affect when disabled. Don't come crying to /fwt/ if you break some component or feature that you didn't understand before pressing the big red button.

**Step 9 (Optional): Removing extraneous icons from Explorer's navigation pane**

Lastly, if you hate all the QuickAccess/Pictures/Music/Videos/Documents/DuplicateRemovableDrives/etc folders in the Explorer navigation pane, you can copy and paste the following reg values into Notepad, save it as a text file, rename it to .reg, then run it and restart Explorer. You will end up with a simplified Explorer listing of just C:\ D:\ E:\ etc ala Win9x all those decades ago.
This pairs well with Step 6 if you moved all your user folders to D:\ or another partition.

BEFORE
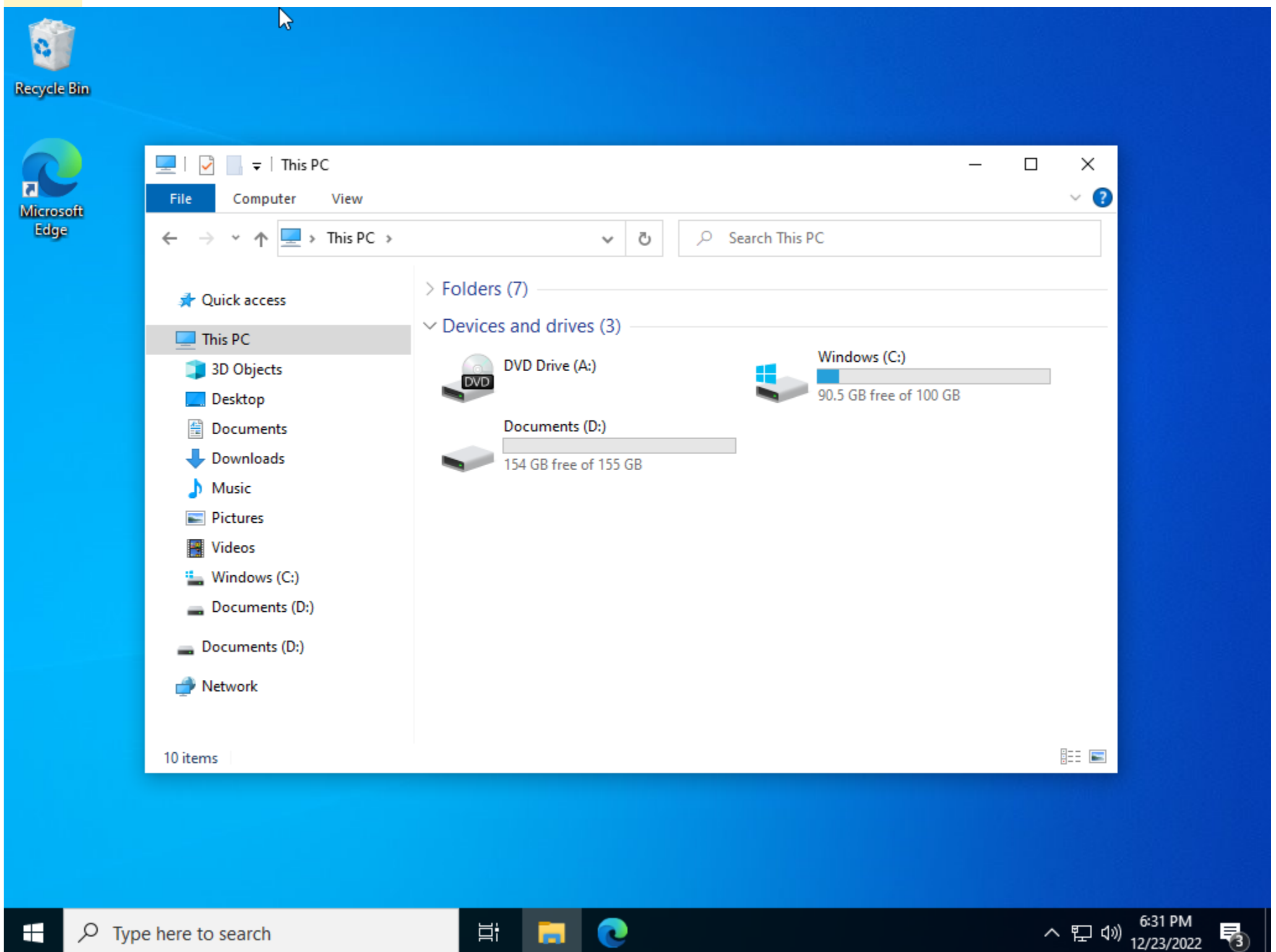
AFTER
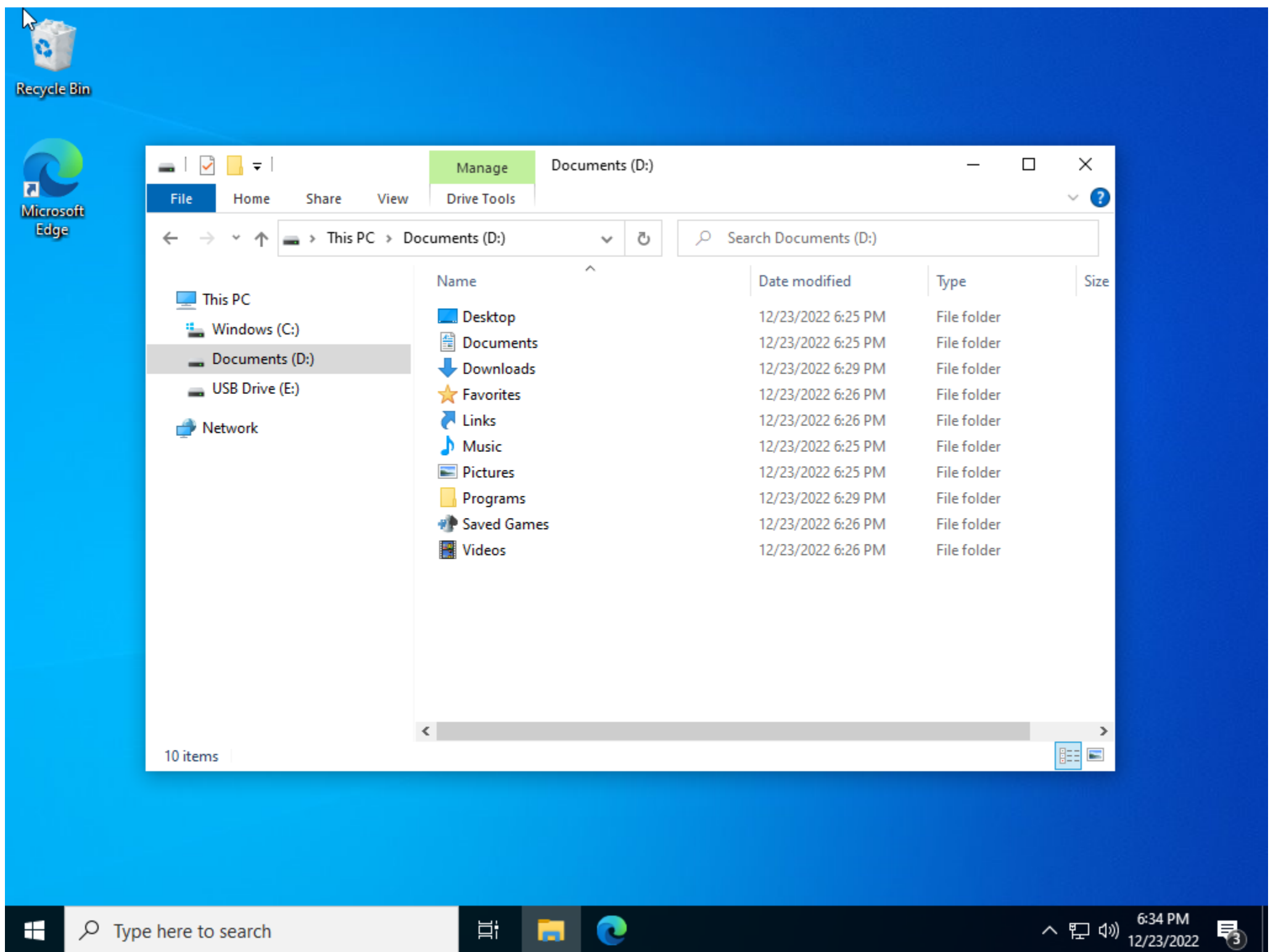
Remove Quick Access in Navigation Pane.reg
Windows Registry Editor Version 5.00
; Remove Quick Access from Navigation Pane
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer]
"HubMode"=dword:00000001

Remove Music in Navigation Pane.reg
Windows Registry Editor Version 5.00
; Remove Music from Navigation Pane
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{a0c69a99-21c8-4671-8703-7934162fcf1d}\PropertyBag]
"ThisPCPolicy"="Hide"
[HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{a0c69a99-21c8-4671-8703-7934162fcf1d}\PropertyBag]
"ThisPCPolicy"="Hide"

Remove Pictures in Navigation Pane.reg
Windows Registry Editor Version 5.00
; Remove Pictures from Navigation Pane
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{0ddd015d-b06c-45d5-8c4c-f59713854639}\PropertyBag]
"ThisPCPolicy"="Hide"
[HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{0ddd015d-b06c-45d5-8c4c-f59713854639}\PropertyBag]
"ThisPCPolicy"="Hide"

Remove Videos in Navigation Pane.reg
Windows Registry Editor Version 5.00
; Remove Videos from Navigation Pane
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{35286a68-3c57-41a1-bbb1-0eae73d76c95}\PropertyBag]
"ThisPCPolicy"="Hide"

[HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{35286a68-3c57-41a1-bbb1-0eae73d76c95}\PropertyBag]
"ThisPCPolicy"="Hide"

Remove Duplicate Removable Drives in Navigation Pane.reg

Windows Registry Editor Version 5.00
; Remove Duplicate Removable Drives from Navigation Pane
[-HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\Desktop\NameSpace\DelegateFolders{F5FB2C77-0E2F-4A16-A381-3E560C68BC83}]
[-HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Microsoft\Windows\CurrentVersion\Explorer\Desktop\NameSpace\DelegateFolders{F5FB2C77-0E2F-4A16-A381-3E560C68BC83}]

Remove 3D Objects in Navigation Pane.reg

Windows Registry Editor Version 5.00
; Remove 3D Objects from Navigation Pane
[-HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\MyComputer\NameSpace{0DB7E03F-FC29-4DC6-9020-FF41B59E513A}]
[-HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Microsoft\Windows\CurrentVersion\Explorer\MyComputer\NameSpace{0DB7E03F-FC29-4DC6-9020-FF41B59E513A}]

Remove Downloads in Navigation Pane.reg

Windows Registry Editor Version 5.00
; Remove Downloads from Navigation Pane
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{7d83ee9b-2244-4e70-b1f5-5393042af1e4}\PropertyBag]
"ThisPCPolicy"="Hide"
[HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{7d83ee9b-2244-4e70-b1f5-5393042af1e4}\PropertyBag]
"ThisPCPolicy"="Hide"

Remove Documents in Navigation Pane.reg

Windows Registry Editor Version 5.00
; Remove Documents from Navigation Pane
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{f42ee2d3-909f-4907-8871-4c22fc0bf756}\PropertyBag]
"ThisPCPolicy"="Hide"
[HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{f42ee2d3-909f-4907-8871-4c22fc0bf756}\PropertyBag]
"ThisPCPolicy"="Hide"

Remove Desktop in Navigation Pane.reg

Windows Registry Editor Version 5.00
; Remove Desktop from Navigation Pane
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{B4BFCC3A-DB2C-424C-B029-7FE99A87C641}\PropertyBag]
"ThisPCPolicy"="Hide"
[HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Explorer\FolderDescriptions{B4BFCC3A-DB2C-424C-B029-7FE99A87C641}\PropertyBag]
"ThisPCPolicy"="Hide"